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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,408	09/25/2003	Xiaolan Ai	TIMK 8497US	5738
1688	7590	12/14/2004	EXAMINER	
POLSTER, LIEDER, WOODRUFF & LUCCHESI 12412 POWERSCOURT DRIVE SUITE 200 ST. LOUIS, MO 63131-3615			LE, DAVID D	
			ART UNIT	PAPER NUMBER
			3681	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/670,408

Applicant(s)

AI, XIAOLAN

Examiner

David D. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/29/03, 03/19/04</u>  | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This is the first Office action on the merits of Application No. 10/670,408, filed on 25 September 2003. Claims 1-10 are pending.

### **Documents**

2. The following documents have been received and filed as part of the patent application:
  - Information Disclosure Statement, received on 12/29/03
  - Information Disclosure Statement, received on 03/19/04

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. **Claims 2-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

#### **Claims 2-7:**

- Lines 1-2 of claim 2 recites the limitation “a loading roller ring”. It is unclear whether this “loading roller ring” is different from the “roller”, as first recited on line 2 of claim 1.

Claims 8-9:

- Claim 8, line 3 recites the limitation “a planetary traction drive”. It is unclear whether this “planetary traction drive” is different from the one that is first recited on line 1 of the claim.
- Claim 8, line 10 recites the limitation “the ratio of  $K_S$  to  $K_R$ ”. There is insufficient antecedent basis for this limitation in the claim.
- Claim 8, lines 10-11 recites “wherein the ratio of  $K_S$  to  $K_R$  results in a more efficient transmission of power and torque between the two raceways than other ratios of  $K_S$  to  $K_R$ .” It is unclear what applicant is referring to by this recitation.
- Claim 9, line 1, “the said means” should be --said means--.

Claim 10:

- Line 11 recites the limitation “the planetary roller member”. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-2, 8, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,688,201 to Zhou.**

Claims 1-2, 8, and 10:

Zhou (i.e., Figs. 1-4; column 1, line 65 – column 5, line 15) discloses a traction drive of planetary configuration comprising:

- A planetary roller (6) positioned between and in frictional contact with an outer ring member (4) and a sun roller member (2) of a planetary traction drive such as to communicate rotational motion between the outer ring member and the sun roller member;
- Wherein the planetary roller includes a means for flexibly mounting having a support shaft (56), an elastic wave spring (50) inserted in the planetary roller, and a bearing (66); and
- Wherein the means for flexibly mounting inherently generates an effective supporting stiffness of the planetary roller and an effective contact stiffness at a contact point where the planetary roller contacts the sun roller member and at a contact point where the planetary roller contacts the outer ring member.

7. **Claims 1-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 3,945,270 to Nelson et al.**

Claims 1-8 and 10:

Nelson (i.e., Figs. 1-6; column 5, line 19 – column 11, line 52) discloses a friction drive transmission comprising:

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- A plurality of planetary rollers (9, 10, 11) positioned between and in frictional contact with an outer ring member (8) and a sun roller member (6) of a planetary traction drive such as to communicate rotational motion between the outer ring member and the sun roller member;
- Wherein each of the planetary roller includes a means for flexibly mounting having a support shaft (34, 35, or 36), an elastic spring (45) inserted in the planetary roller, and a bearing (33);
- Wherein the means for flexibly mounting inherently generates an effective supporting stiffness of the planetary roller and an effective contact stiffness at a contact point where the planetary roller contacts the sun roller member and at a contact point where the planetary roller contacts the outer ring member; and
- Wherein the structural design of the friction drive transmission is determinable by precise mathematical computation formulae (see column 10, line 1 – column 11, line 52).

**Note:**

It has been held that discovering an optimum value using mathematical manipulations involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

***Allowable Subject Matter***

8. Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- W. V. Chery (U. S. Patent No. 3,048,058) teaches a transmission as shown in Figs. 1-2.
- Fini, Jr. (U. S. Patent No. 5,584,774) teaches a planetary wedge drive as shown in Figs. 1-2.
- Ai (U. S. Patent No. 6,689,008) teaches a planetary traction drive transmission as shown in Fig. 1.
- UK Patent Application No. GB 2185084A teaches a roller type friction drive system as shown in Fig. 1.
- WO 03/064891 teaches an eccentric planetary drive transmission as shown in Fig. 4.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 703-305-3690. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A Marmor can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
ddl

  
CHARLES A. MARMOR  
SUPERVISORY PATENT EXAMINER  
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